

Fig. 1

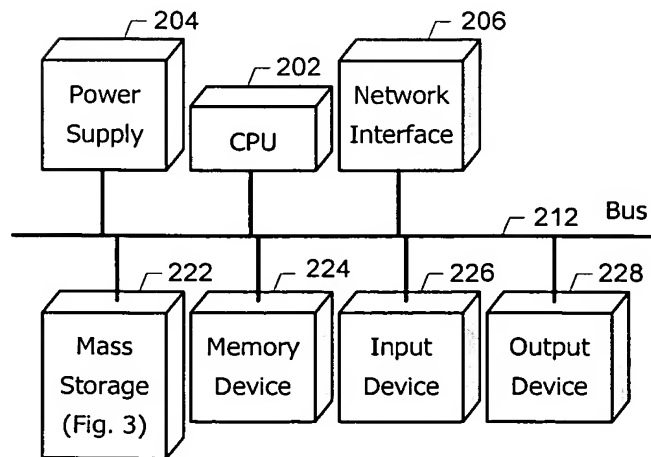


Fig. 2

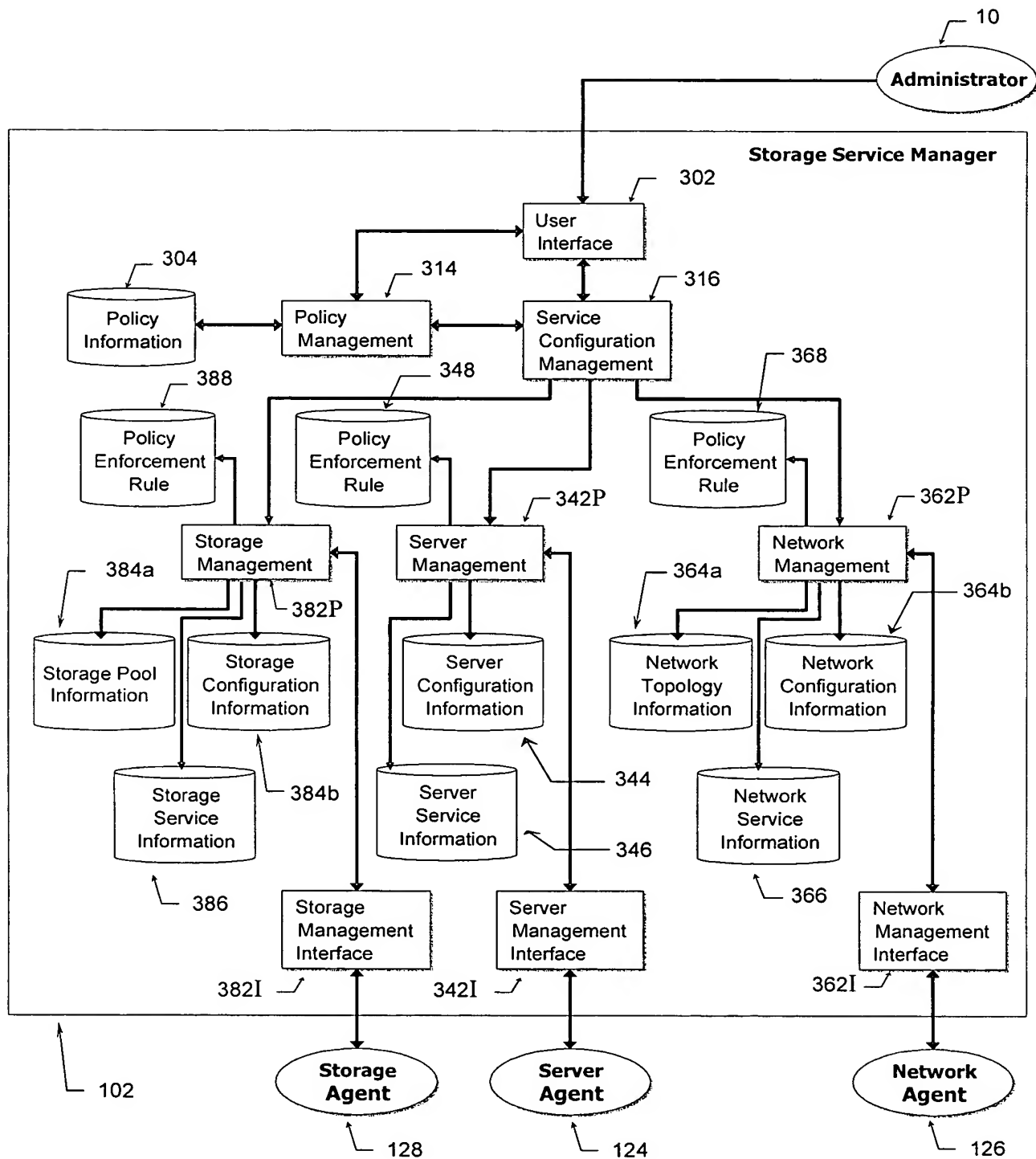


Fig. 3

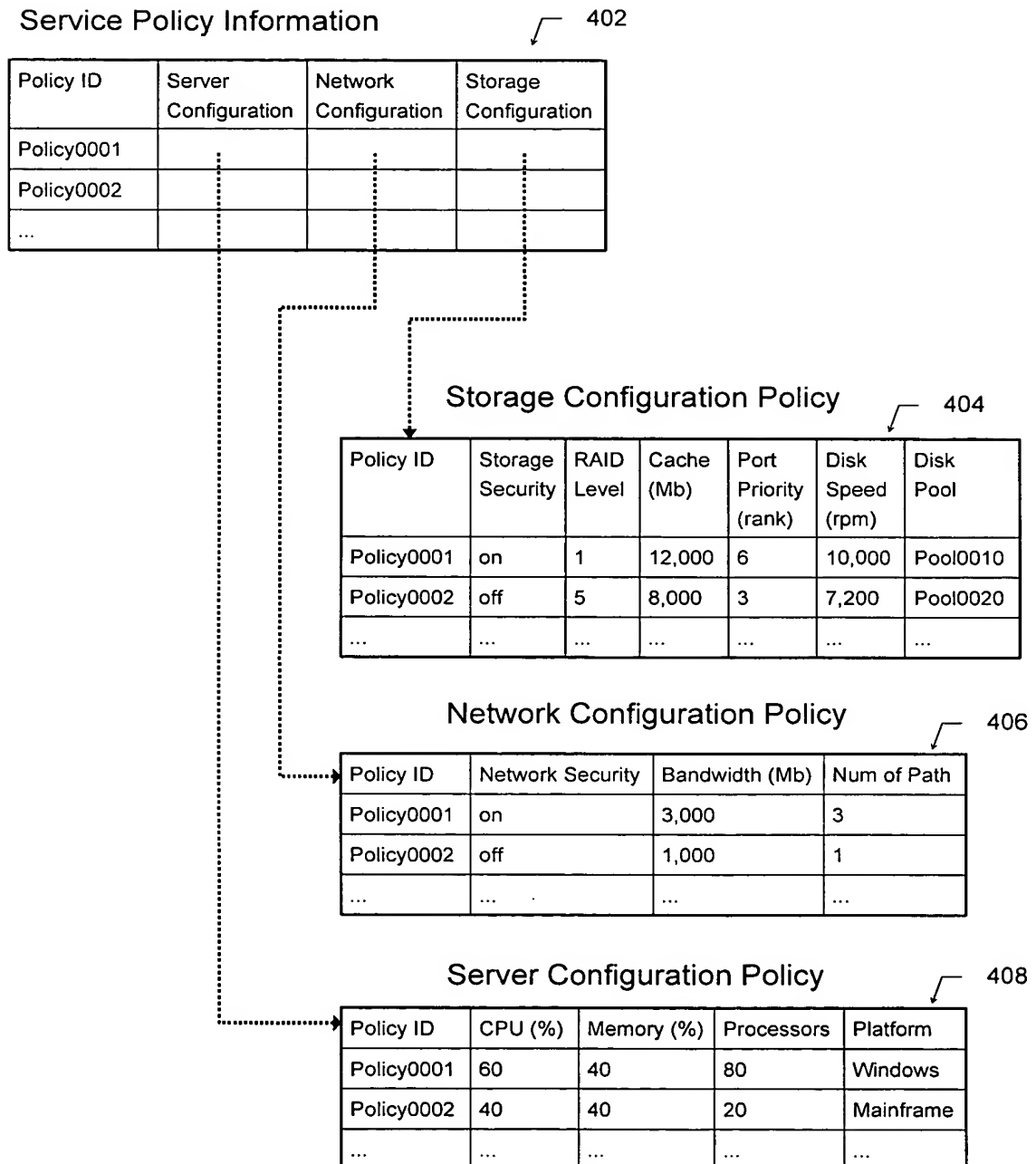


Fig. 4 Policy Information Data Structure

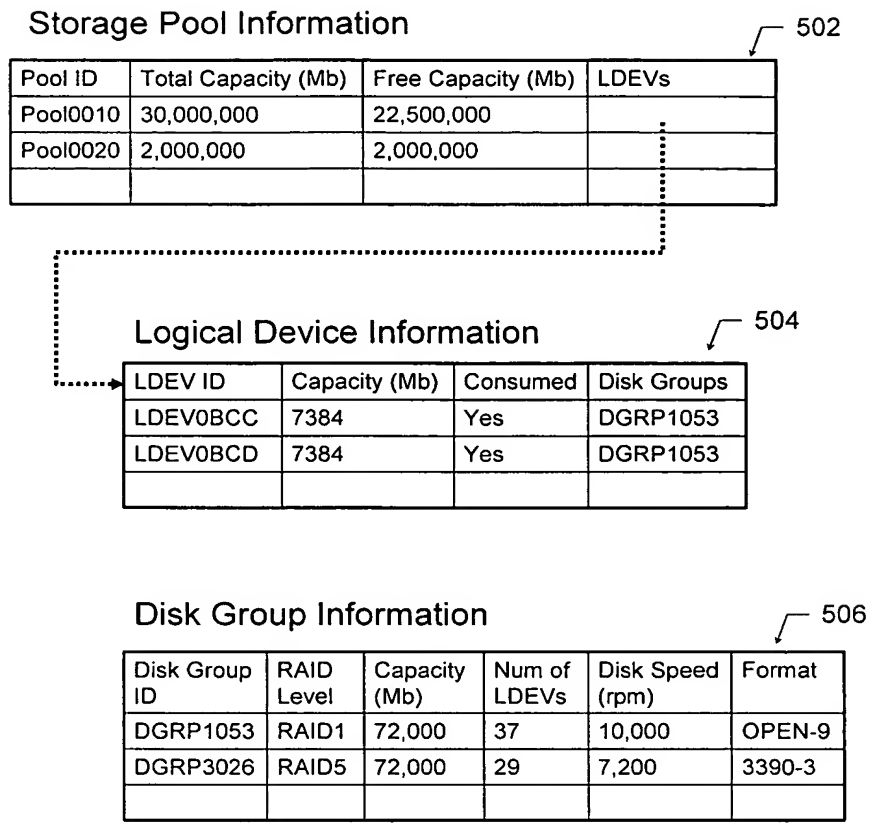


Fig. 5 Storage Pool Information

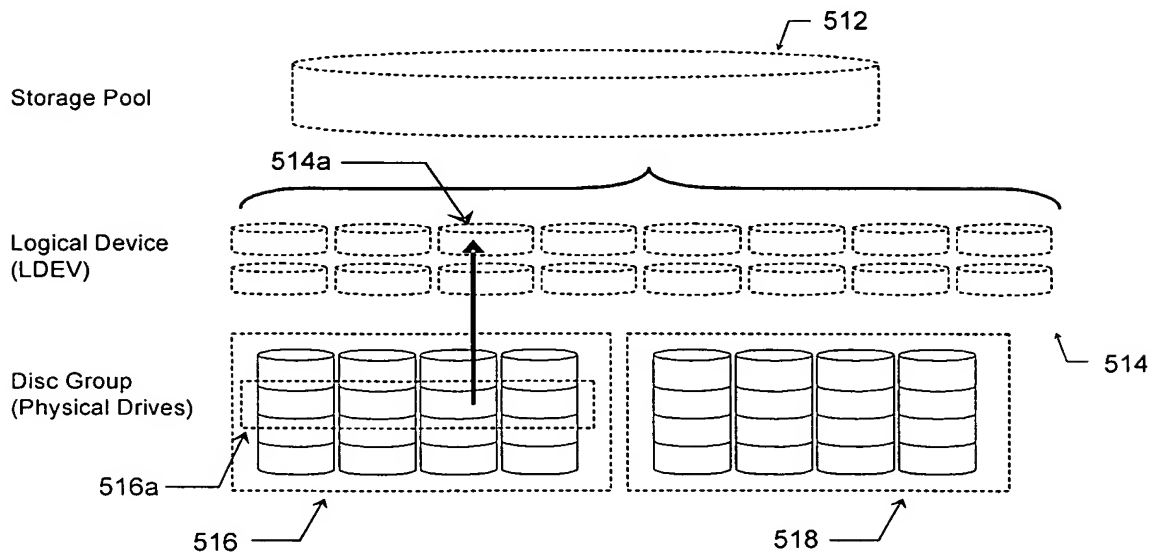


Fig. 5A

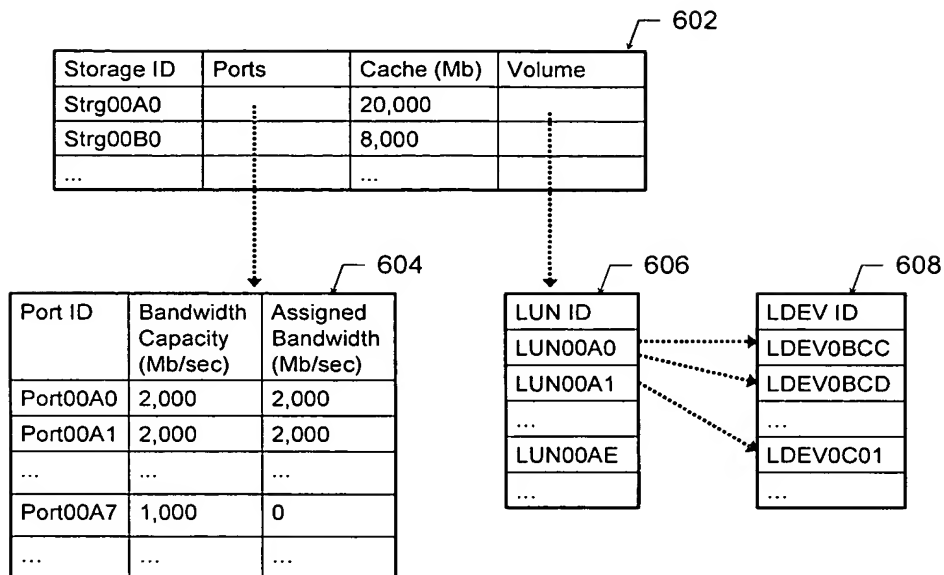


Fig. 6 Storage Configuration Information

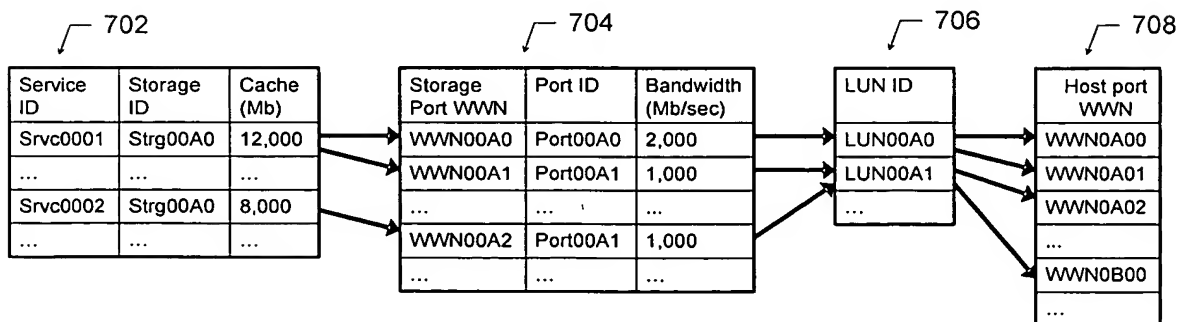


Fig. 7 Storage Service Information

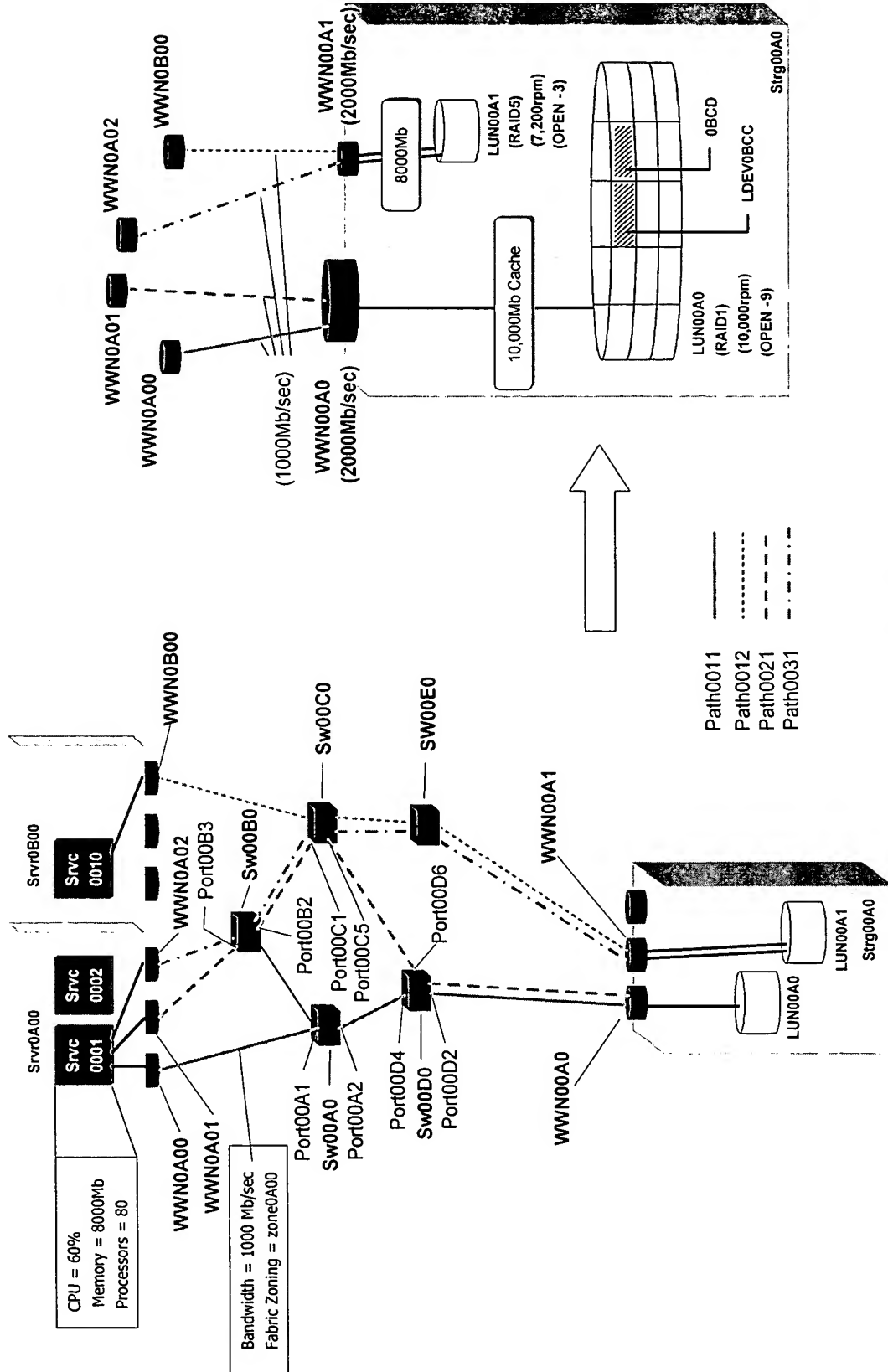


Fig. 8

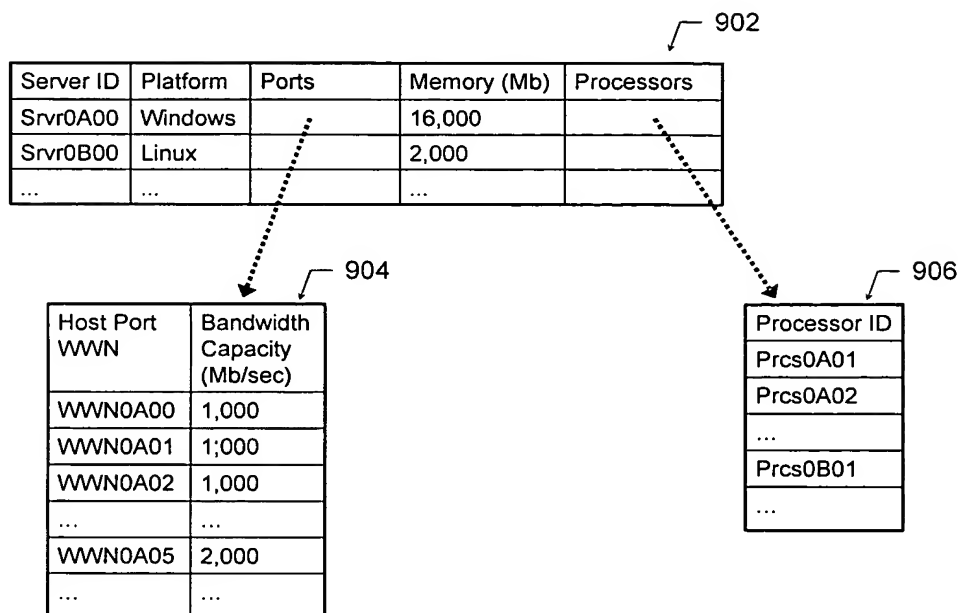


Fig. 9 Server Configuration Information

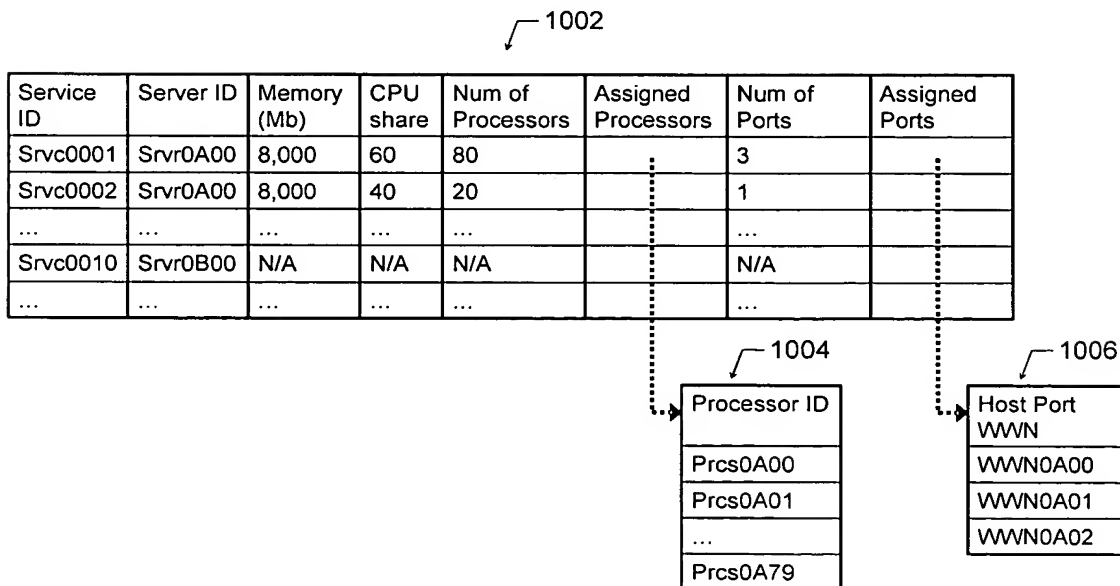


Fig. 10 Server Service Information

| Source Object |          | Destination Object |          |
|---------------|----------|--------------------|----------|
| Object ID     | Port ID  | Object ID          | Port ID  |
| Server00A0    | WWN0A00  | Sw00A0             | Port00A1 |
| Server00A0    | WWN0A01  | Sw00B0             | Port00B3 |
| ...           | ...      | ...                | ...      |
| Sw00A0        | Port00A2 | Sw00D0             | Port00D4 |
| Sw00B0        | Port00B2 | Sw00C0             | Port00C1 |
| Sw00C0        | Port00C5 | Sw00D0             | Port00D6 |
| ...           | ...      | ...                | ...      |
| Sw00D0        | Port00D2 | Strg00A0           | WWN00A0  |
| ...           | ...      | ...                | ...      |

Fig. 11 Network Topology Information

| Network ID | Type          | Device Objects | Security    |
|------------|---------------|----------------|-------------|
| Net0AA0    | Fibre Channel | ...            | WWN Zoning  |
| Net0AB0    | Ethernet      | ...            | Virtual LAN |
| ...        | ...           | ...            | ...         |

| Object ID |
|-----------|
| Sw00A0    |
| Sw00B0    |
| Sw00C0    |
| ...       |

Fig. 12 Network Configuration Information

| Service ID | Path ID  | Host Port WWN | Storage Port WWN | Zone ID  | Bandwidth (Mb/sec) | Objects |
|------------|----------|---------------|------------------|----------|--------------------|---------|
| Srvc0001   | Path0011 | WWN0A00       | WWN00A0          | Zone0A00 | 1,000              | ...     |
|            | Path0021 | WWN0A01       | WWN00A0          | Zone0A00 | 1,000              | ...     |
|            | Path0031 | WWN0A02       | WWN00A1          | Zone0A00 | 1,000              | ...     |
| Srvc0002   | Path0012 | WWN0B00       | WWN00A1          | Zone0B00 | 1,000              | ...     |
| ...        | ...      | ...           | ...              | ...      | ...                | ...     |

| Switch ID | In Port ID | Out Port ID |
|-----------|------------|-------------|
| Sw00A0    | Port00A1   | Port00A2    |
| Sw00D0    | Port00D4   | Port00D2    |
| ...       | ...        | ...         |

Fig. 13 Network Service Information



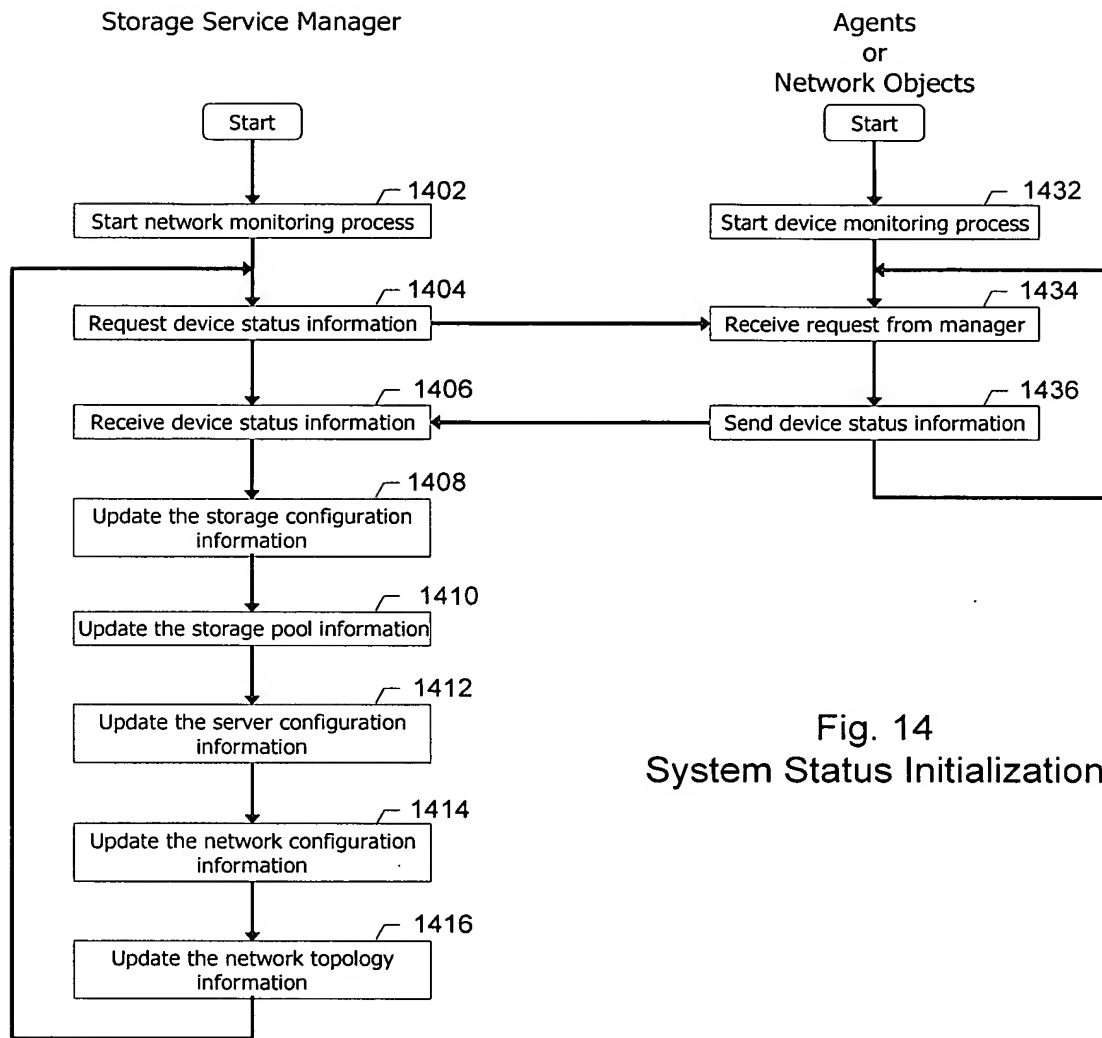


Fig. 14  
System Status Initialization

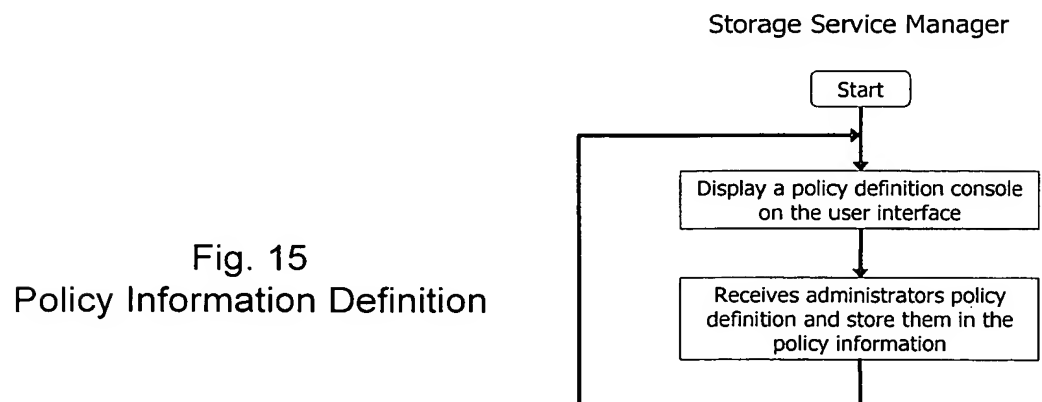


Fig. 15  
Policy Information Definition

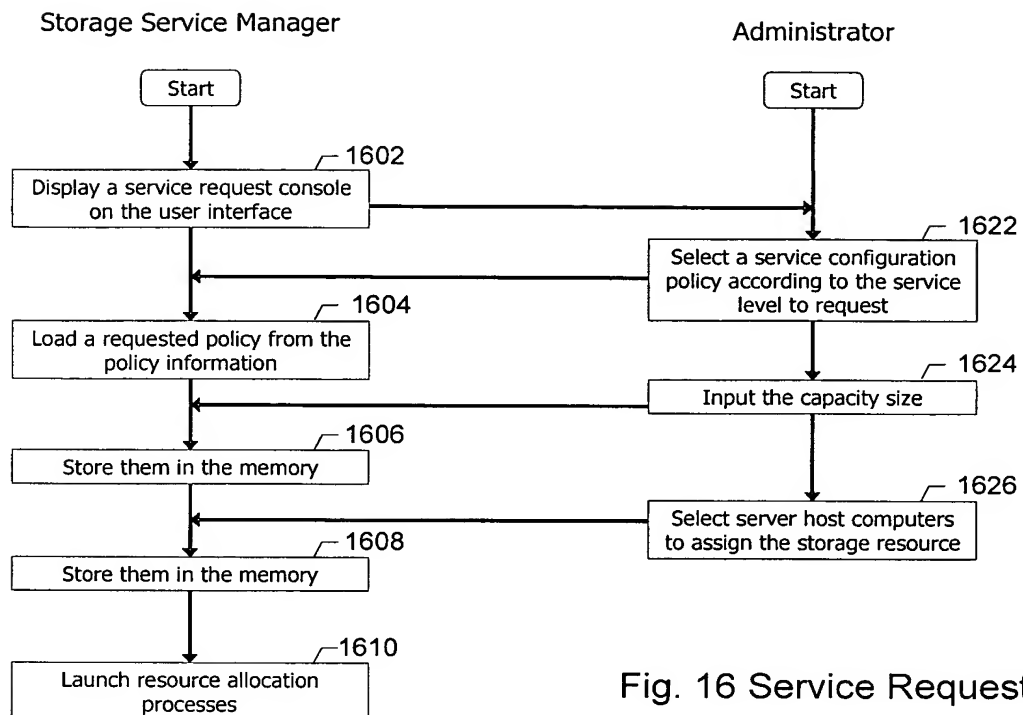


Fig. 16 Service Request

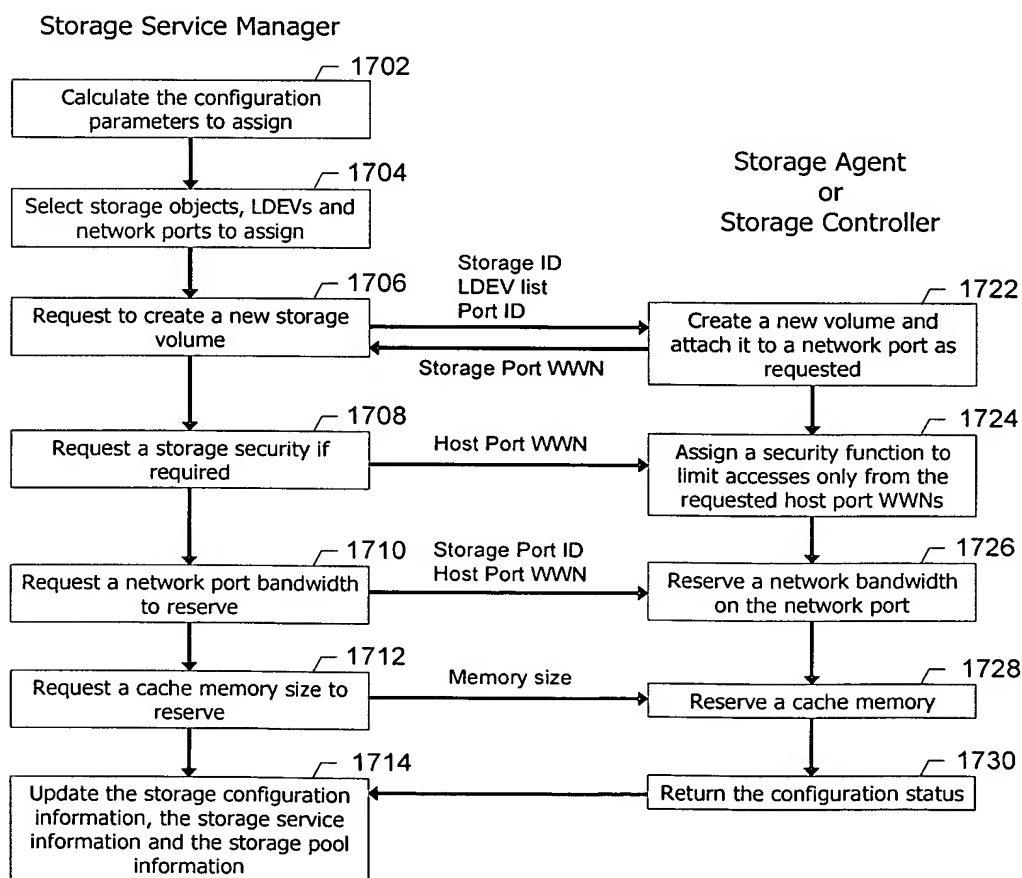


Fig. 17 Storage Configuration

#### Storage Security Enforcement Rule

```
If ('Storage Security' == 'on')
then
  load 'host port WWN';
  load 'storage port ID';
  apply 'LUN Security' for 'host port WWN' on 'storage port ID';
```

Fig. 17A Storage Security Enforcement

#### Port Bandwidth Calculation Rule

```
load 'port priority in rank';
load 'storage port ID';
load 'bandwidth capacity' on 'storage port ID';
'port priority in bandwidth' := 'port priority in rank' x 'bandwidth capacity' x 1/8
```

Fig. 17B Port Bandwidth Calculation

#### LDEV Selection Rule

```
load 'capacity size';
load 'policy ID';
load 'pool ID' from 'policy ID';
load 'disk speed' from 'policy ID';
load 'RAID level' from 'policy ID';
load 'platform type' of 'server ID';
If ('platform type' == "Windows")
then
  'format type' := OPEN;
else
  'format type' := 3390;
If ('capacity size' > 'free capacity' of 'pool ID')
then
  return FALSE;
foreach ('disk group ID' of 'pool ID'
  If ('format' of 'disk group ID' == 'format type')
  then
    If ('disk speed' of 'disk group ID' > 'disk speed')
    then
      If ('RAID level' of 'disk group ID' == 'RAID level')
      then
        get 'LDEV ID' from 'disk group ID';
```

Fig. 17C LDEV Selection

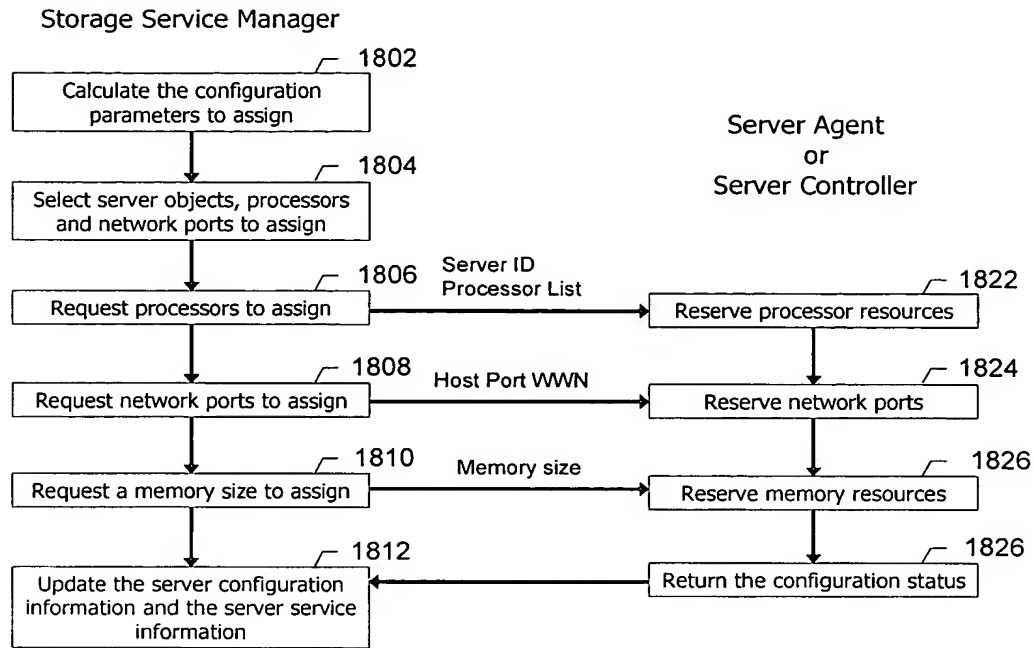


Fig. 18 Server Configuration

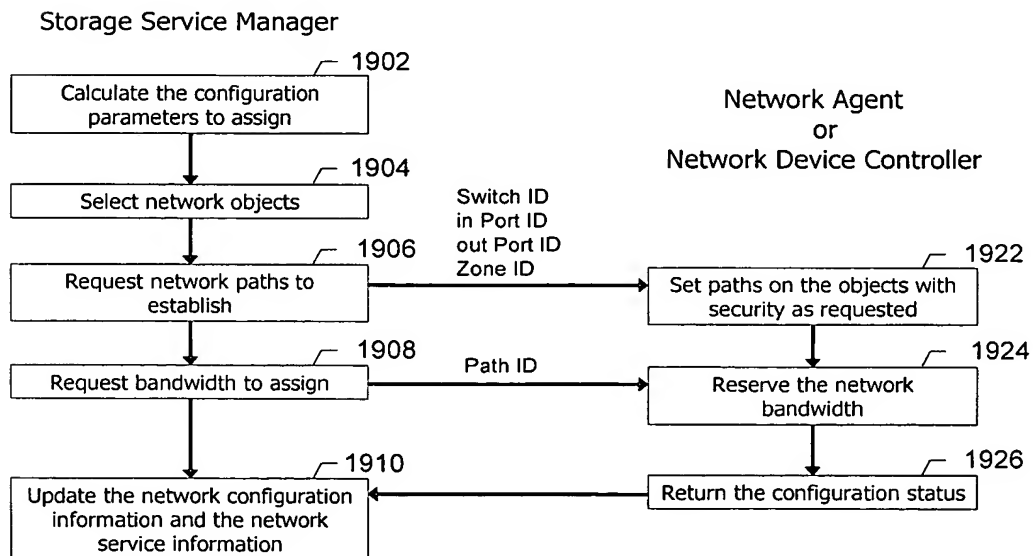


Fig. 19 Network Configuration

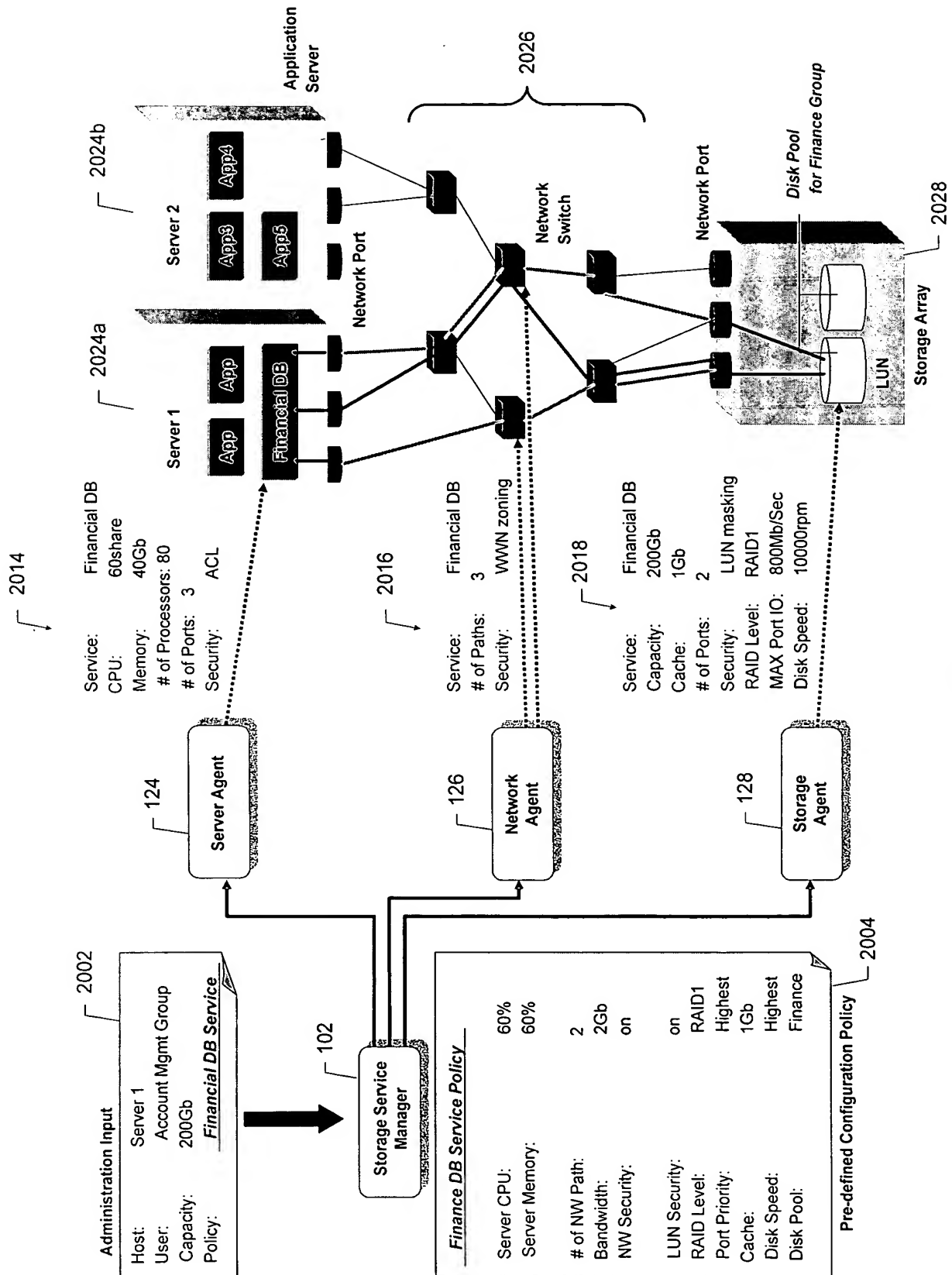
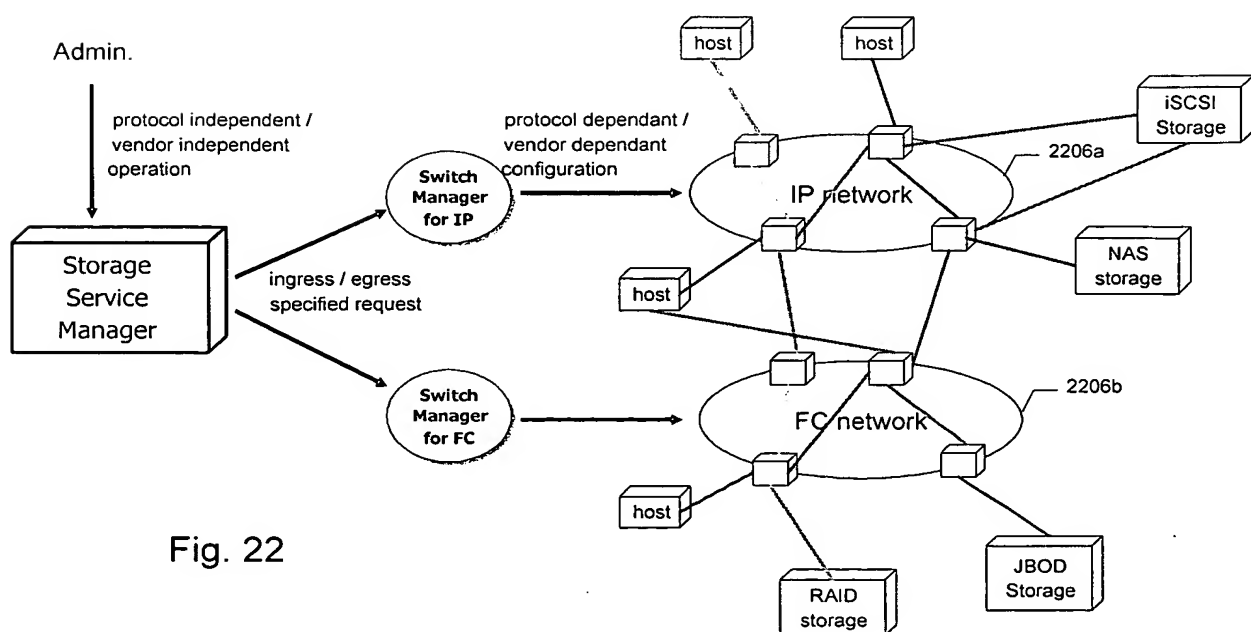
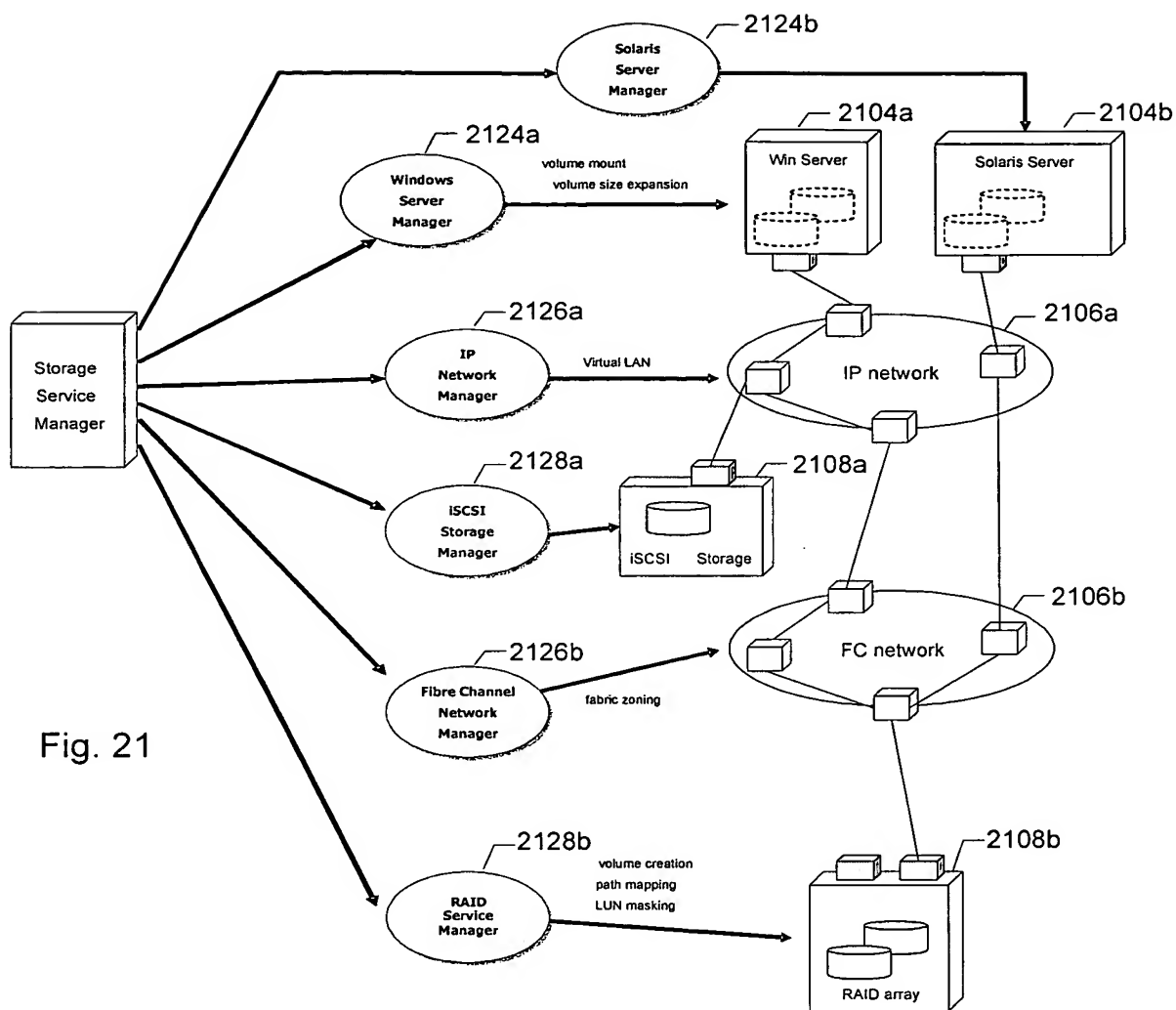


Fig. 20



|               |        |
|---------------|--------|
| Capacity (Gb) | _____  |
| RAID Level    | 1/4/5  |
| Security      | Yes/No |
| Application   | _____  |
| User Group    | _____  |
| Backup Path   | _____  |

Fig. 20A

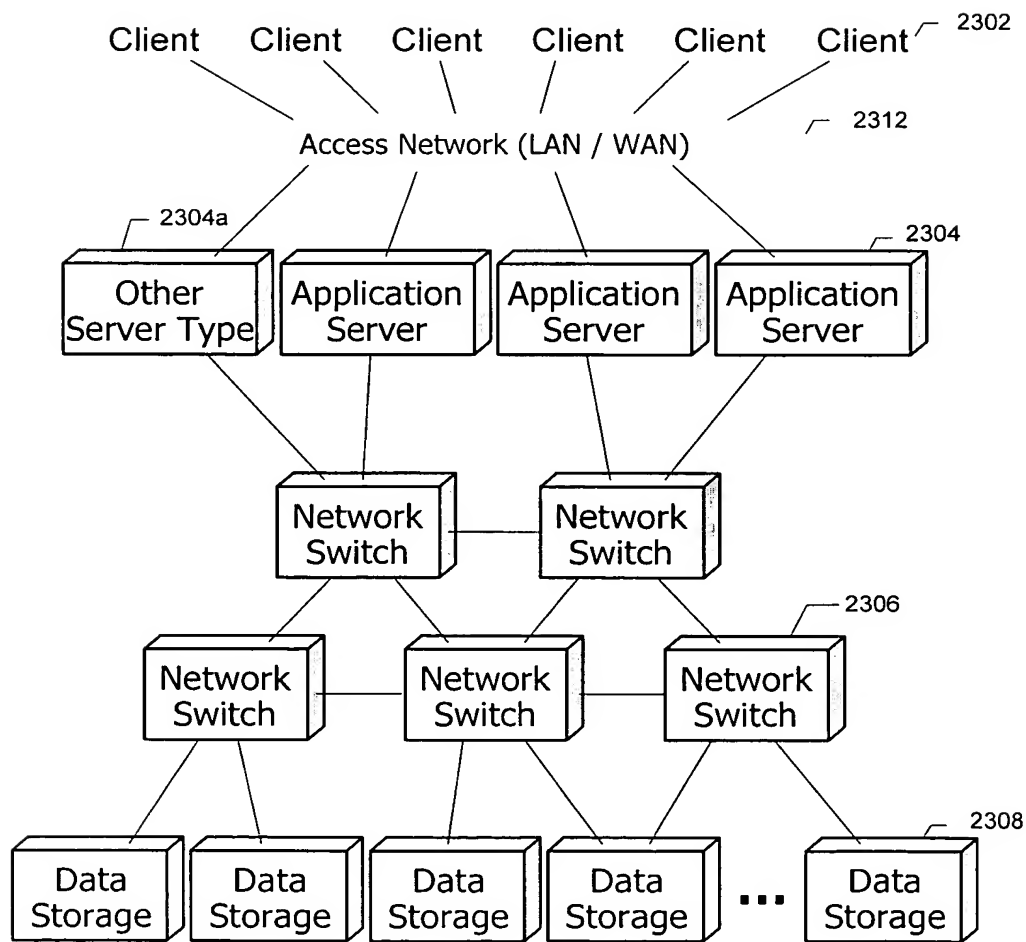


Fig. 23  
(Prior Art)